REMARKS/ARGUMENTS

Claim Amendments

The Applicant has amended claims 1, 8 and 11. Applicant respectfully submits no new matter has been added. Accordingly, claims 1-5, 8-9 and 11-18 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 1-4, 8-9, 11-14, and 16-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishiguro (Publication No. US 2003/0185397 A1) in view of Graunk (PG PUB: US 2004/0032950 A1). The Applicant has amended claims 1, 8 and 11 to more clearly claim the invention and the amendments are supported by the Specification at page 4. The Applicant respectfully traverses the rejection of these claims.

The Applicant respectfully submits that the preambles of the independent claims distinguish the Applicant's invention from the cited prior art. The preambles of the independent claims limit the applicant's invention to "...optimizing distribution of a service in a Wide Area Network..." which distinguishes the Applicant's invention from the cited prior art that is directed to license management and encryption.

Even so, the Ishiguro reference discloses an information processing apparatus for managing copyrights and uses a tree as a means for locating and encrypting license keys. The basic notion of Ishiguro is to provide a system for managing content having different formats and part of Ishiguro discloses placing a license key in all nodes of a network for "...allowing different systems to exercise secure control over the copyrights for contents". (page 1, para [0008]. Each key is encrypted according to its position on the tree; i.e., "the content at a given level is encrypted using the keys at a lower level." Further, the license keys "...correspond(s) to one of the paths made up of the nodes at the 64 (=8+24+32) levels" (para. [0148]). And as Ishiguro also points out "...it is possible to define as many as 2 to the 24th power (about 16 million licenses)." (page 8, para

[0147]). In sum, the tree is used as a management and encryption device, not as a modelling device and the Applicant respectfully submits that a person skilled in the art would not look to the Ishiguro reference to arrange client/server relationships but more for a means to generate encryption.

The Applicant respectfully directs the Examiner's attention to Claim 1:

1.   (Currently Amended)   A method for optimising distribution of a service in a Wide Area Network, said method comprising steps of:
   establishing a tree topology of the Wide Area Network;
   modelling the tree topology by means of a graph;
   placing a service instance in each leaf in said graph, said each leaf representing a node in the WAN directly connected to the plurality of clients; and
   starting from the leaves, for each of the service instances:
      checking whether the service instance when placed in a vertex on the next higher level can fulfil the requirements of all clients to be served by said service instance; and
      depending on the result of the checking step, moving said service instance one level higher to minimize a number of service instances necessary to provide the service to the clients. (Emphasis added)

The Applicant respectfully submits that a tree graph is well known. The Applicant uses the structure and design of a tree graph to efficiently assign clients to servers or server systems. "Service instance" appears to be either ill defined or misunderstood because of the comparison to the Ishiguro reference. In the Background of the present invention (page 1, lines 6-11), the Applicant defines a service instance as "...an entity that can provide a service to a client" and provides examples; "[I]n the case of Internet services, the service instance is for example a proxy server; in the case of information services, the service instance is for example a database; in the case of logistics, the service instance can be a transfer station." The Examiner appears to be comparing a means for encrypting large numbers of license keys for copyrighted content to the efficient arrangement of clients to servers.

As described in amended claim 1, the Applicant's invention optimizes service instance distribution in a WAN by modelling the WAN in a tree-topology graph. Service instances (proxy servers in an internet) are allocated, or assigned, to the leaves in the graph and the minimum number of service instances in the WAN is determined. The

optimized number of service instances is determined by checking whether moving a particular service instance from one level to a higher level in the tree graph is capable of completely serving all the clients made possible by the move.

As previously discussed, the Ishiguro reference does not disclose a Wide Area Network. The Graunke reference discloses a re-encryption system of publicly distributed content. Graunke mentions that distribution of the content may be effected through a Wide Area network. However, neither Ishiguro nor Graunke disclose moving service instances to a higher level node in order minimize the number of service instances and to provide the same service to more clients. Nor do they mention the use of a tree-topology graph.

The Ishiguro and Graunke references, individually or in combination, lack the emphasized limitations of amended claim 1. The Applicant submits that amended claims 8 and 11 are analogous to claim 1 and contain similar limitations. This being the case, the Applicant respectfully requests the allowance of claims 1, 8, and 11 and the respective dependent claims.

Claims 5 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishiguro (Publication no.:US 2003/0185397 A1) in view of Graunke (PGPUB: US2004/0032950A1) and further in view of Moody (publication no.: US 2005/0005272).

The Moody reference is cited for teaching the use of a Petri net analysis. However, Moody lacks the limitations that are also lacking in the Ishiguro and Graunke references. The Applicant respectfully submits that the combination of Moody and the Ishiguro and Graunke references do not disclose the limitations as recited in claims 1, 8 and 11. Claims 5 and 15 depend from amended claims 1 and 11 and recite further limitations in combination with the novel elements of claims 1 and 11. Therefore, the allowance of claims is respectfully requested.

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CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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